

## WHAT IS CLAIMED IS:

1. An apparatus for forming a three-dimensional product by applying binder to powder material to form bound bodies successively, said bound bodies corresponding to sectional data blocks which are produced by slicing an original object with parallel planes, said apparatus comprising:  
a layer forming mechanism for forming a layer of said powder material;  
an applying head for applying plural kinds of materials to said layer, said plural kinds of materials including at least one kind of binder; and  
a controller for controlling said applying head to apply said plural kinds of materials selectively to a predetermined region on said layer.

2. The apparatus of claim 1, wherein  
said applying head applies one material included in said plural kinds of materials after another material, and

15        said another material becomes stable faster than said one material after applied to said layer.

3. The apparatus of claim 1, wherein  
said applying head applies binder and ink.

20        4. The apparatus of claim 3, wherein  
said applying head applies said binder after said ink.

25        5. The apparatus of claim 1, wherein  
said applying head applies a plurality of binders to said predetermined

region, said plurality of binders have different colors from one another.

6. The apparatus of claim 5, wherein  
said plurality of binders include three binders which are colored with three  
5 primary colors, respectively.

7. The apparatus of claim 5, wherein  
said plurality of binders include a binder colored with white.

10 8. The apparatus of claim 5, wherein  
said plurality of binders include a binder which is colorless and transparent,  
or milky white.

15 9. The apparatus of claim 5, wherein  
said plurality of binders include a colorless and transparent binder and a  
binder colored with a color which is different from a color of said power material.

20 10. The apparatus of claim 5, wherein  
said predetermined region is include a coloring region and a non-coloring  
region, and  
said powder material is bound with said plurality of binders selectively in  
said coloring region and with one of said plurality of binders in said non-coloring  
region.

25 11. The apparatus of claim 10, wherein

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~~said coloring region includes a region which appears on surface of said three-dimensional product.~~

12. The apparatus of claim 10, further comprising:

5 a plurality of tanks for containing said plurality of binders and supplying said plurality of binders to said applying head; and

detectors for detecting amount of rest of said plurality of binders in said plurality of tanks, wherein

10 a binder which is remaining comparatively more in one of said plurality of tanks is applied to said non-coloring region.

13. The apparatus of claim 1, wherein

15 said applying head applies a plurality of binders which give different senses of mass from one another to said three-dimensional product.

14. The apparatus of claim 5, wherein

said applying head comprises a plurality of nozzles which jet said plurality of binders, respectively.

20 15. The apparatus of claim 1, wherein

said powder material is white.

16. The apparatus of claim 15, wherein

25 said powder material is made of white pigment.

17. The apparatus of claim 15, wherein  
said powder material is mixed with powder of white pigment.
18. The apparatus of claim 17, wherein  
5 particle size of said powder of white pigment is smaller than particle size of  
said powder material.
19. The apparatus of claim 15, wherein  
10 said powder material contains white pigment.
20. The apparatus of claim 15, wherein  
said powder material includes white pigment, and said white pigment is  
titanium oxide.
- 15 21. The apparatus of claim 1, wherein  
SAB 20 said powder material is colorless and transparent.
22. The apparatus of claim 1, wherein  
amount of said at least one kind of binder applied to said predetermined  
region is constant per unit area of main surface on said layer of said powder  
material.
23. The apparatus of claim 1, wherein  
said layer forming mechanism comprises:  
25 powder supplier for forming a left-side heap and a right-side heap of said

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powder material on left and right sides of a space where said three-dimensional product is formed; and

a left-side powder spreading member and a right-side powder spreading member provided on left and right sides of said applying head, respectively,

in case of moving said applying head from left to right, said right-side powder spreading member spreads said left-side heap to right direction to form a layer of said powder material, and

in case of moving said applying head from right to left, said left-side powder spreading member spreads said right-side heap to left direction to form a layer of  
10 said powder material.

24. The apparatus of claim 23, wherein

said right-side powder spreading member and said left-side powder spreading member move up and down alternately, and

15 while one powder spreading member is forming a layer of said powder material, another spreading member retreats upward.

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25. A method of forming a three-dimensional product by applying binder to powder material to form bound bodies successively, said bound bodies corresponding to sectional data blocks which are produced by slicing an original object with parallel planes, said method comprising the steps of:

a) forming a layer of said powder material;

b) applying plural kinds of materials selectively to a predetermined region on said layer, said plural kinds of materials including at least one kind of binder;

25 and

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c) repeating said steps a) and b).

26. An apparatus for forming a three-dimensional product by applying binder to powder material, said three-dimensional product corresponding to an original object, said apparatus comprising:

a layer forming mechanism for forming layers of powder material successively, said powder material having thermo plasticity;

an applying head for applying material including binder to each layer after said layer forming mechanism formed said each layer to form bound bodies successively, said bound bodies corresponding to sections which are sliced off from said original object with parallel planes; and

a heater for heating a three-dimensional product formed by said layer forming mechanism and said applying head.

15 27. The apparatus of claim 26, wherein

said heater comprises a lamp for applying light to said three-dimensional product.

28. A method of forming a three-dimensional product by applying binder to powder material, said three-dimensional product corresponding to an original object, said method comprising the steps of:

a) forming a layer of powder material which has thermo plasticity;

b) applying material including binder to said layer and forming a bound body corresponding to a section of said original object;

25 c) repeating said steps a) and b), to thereby laminate bound bodies and form

a three-dimensional product, said bound bodies corresponding to sections which are sliced off from said original object with parallel planes; and  
d) heating said three-dimensional product.

5 29. The method of claim 28, wherein

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light is applied to said three-dimensional product in said step d).

10 30. The method of claim 28, wherein

said powder material is made of thermo-plastic resin.

31. The method of claim 30, wherein

said powder material is toner for electrophotography.

15 32. The method of claim 28, wherein

said powder material is colorless and transparent, or white.